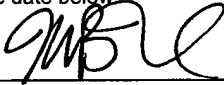


CERTIFICATE OF MAILING 37 C.F.R. 1.8	
I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-01450, on the date below:	
March 10, 2005 Date	 Mark B. Wilson

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
JOHNSTON ET AL.

Serial No.: 10/023,437

Filed: DECEMBER 17, 2001

For: METHODS AND COMPOSITIONS FOR
VACCINATION COMPRISING NUCLEIC
ACID AND/OR POLYPEPTIDE
SEQUENCES OF CHLAMYDIA

Group Art Unit: 1635

Examiner: FORD, VANESSA L.

Atty. Dkt. No.: UTSD:736US/MBW

DECLARATION OF AKIRA TAKASHIMA, M.D., PH.D.

I, Akira Takashima, M.D., Ph.D., hereby declare as follows:

1. I am a Professor at the University of Texas Southwestern Medical Center. I have extensive experience in the fields of immunology and molecular biology. References containing examples of my work are included in my *Curriculum Vitae*. A copy of my *Curriculum Vitae* is attached as Exhibit 1.

2. I have reviewed relevant documents relating to the above-referenced patent application. Specifically, I have reviewed the Office Action dated November 10, 2004, the specification of

the application, the pending claims, and the amended claims. In light of these documents, and my knowledge of immunology and molecular biology, I make the following statements.

3. I understand that the claims in this application relate to methods of immunizing an animal comprising providing to the animal at least one *Chlamydia psittaci* antigen in an amount effective to induce an immune response against *Chlamydia psittaci*.

4. I also understand that the Examiner has rejected several claims of the application on the grounds that the specification is not enabling for all antigenic fragments of SEQ ID NOs: 7, 9, 11, and 13 encompassed by the claims. I do not find this to be the case.

5. Based on my experience and knowledge in the fields of immunology and molecular biology, I believe that a scientist of standard skill in immunology or molecular biology would be capable of eliciting an immune response in an animal against *Chlamydia psittaci* using a number of antigenic fragments of SEQ ID NOs: 7, 9, 11, and 13 by following the teachings in the specification.

6. The present specification describes an “antigenic fragment” as a fragment that can elicit an immune response in an animal (p. 13, ln. 19-20). The specification provides further description of “fragments” of the SEQ ID NOs: 7, 9, 11, and 13 at page 13, lines 9-18. Based on these descriptions, a person of standard skill in molecular biology or immunology would understand an antigenic fragment of SEQ ID NOs: 7, 9, 11, or 13 to refer to a fragment of at least 5 contiguous amino acids of SEQ ID NOs: 7, 9, 11, or 13, but fewer than the full length of SEQ ID NOs: 7, 9, 11, or 13, capable of eliciting an immune response in an animal.

7. I have reviewed the data presented in Examples 1 through 12 of the present specification. These data show, among other things, that the 443 amino acid polypeptide of SEQ ID NO: 9 can be used to immunize an animal (*see e.g.*, p. 75, Table 3; p. 80, ln. 2-6). Furthermore, these data show that a 149 amino acid fragment (SEQ ID NO: 7) of SEQ ID NO: 9 can also be used to immunize an animal (*see e.g.*, p. 75, Table 3; p. 80, ln. 2-6). Based on these results, a scientist will understand that there would likely be other antigenic fragments of SEQ ID NO: 9 and SEQ ID NO: 7 that would elicit an immune response in an animal.

8. The data in the present specification also show that the 100 amino acid polypeptide of SEQ ID NO: 13 can be used to immunize an animal (*see e.g.*, p. 75, Table 3; p. 80, ln. 2-6). In addition, a 41 amino acid fragment (SEQ ID NO: 11) of SEQ ID NO: 13 can also be used to immunize an animal (*see e.g.*, p. 75, Table 3; p. 80, ln. 2-6). Based on these results, a scientist will understand that there would likely be other antigenic fragments of SEQ ID NO: 11 and SEQ ID NO: 13 that would elicit an immune response in an animal.

9. The present specification provides guidance for making and evaluating antigenic fragments of SEQ ID NOs: 7, 9, 13, and 11. First, the specification provides the nucleic acid and amino acid sequences of these antigens as a starting point from which a scientist could make other antigenic fragments. As described in the specification, it is also known that certain amino acids may be substituted for other amino acids in a protein structure without appreciable loss of interactive binding capacity with antigen-binding regions of antibodies (p. 26, ln. 18-20).


10. Furthermore, it is also known to scientists in the fields of molecular biology and immunology that immunogenic proteins typically contain multiple immunogenic epitopes or determinants. A scientist of standard skill would be capable of identifying antigenic fragments of

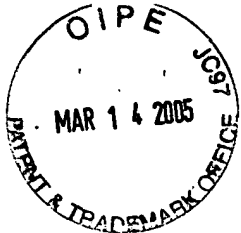
SEQ ID NOs: 7, 9, 11, and 13 by following the teachings in the specification. For example, as described in the present specification at page 25, lines 8-20, antigenic determinants of a polypeptide may be identified by preparing a range of cDNAs encoding peptides lacking successively longer fragments of the C-terminus of the polypeptide. The immunogenic activity of each of these peptides then identifies those fragments or domains of the polypeptide that are essential for antigenic activity. Further experiments in which only a small number of amino acids are removed or added at each iteration then allows the location of other antigenic determinants of the polypeptide. Scanning a full-length antigenic polypeptide for antigenic epitopes or determinants is routine in the field of immunology. Thus, a scientist of standard skill in molecular biology or immunology could identify antigenic fragments of SEQ ID NOs: 7, 9, 11, and 13 using only routine screening techniques as described in the present specification.

11. In conclusion, a molecular biologist or immunologist could practice the presently claimed invention using antigenic fragments of SEQ ID NOs: 7, 9, 11, or 13 by following the teachings of the present specification.

12. I declare that all statements made of my knowledge are true and all statements made on the information are believed to be true; and, further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issued thereupon.

Date: 2-23-05


Akira Takashima, M.D., Ph.D.



CURRICULUM VITAE
Akira Takashima, M.D., Ph.D.

Date of Birth: February 24, 1954

Place of Birth: Gifu, Japan

Marital Status: Married, 1 child

Nationality: Japanese

Visa Status: Permanent Resident

Present address: UT Southwestern Medical Center
Department of Dermatology
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Degrees: M.D. Nagoya City University, 1981
Ph.D. Nagoya City University, 1989

Education: 1975 - 1981 Nagoya City University Medical School, Nagoya, Japan

Research and Professional Experience:

1981-1982	Resident, Department of Dermatology, Nagoya City University Medical School Nagoya, Japan
1982-1983	Faculty ("joshu"), Department of Dermatology, Nagoya City University
1983-1985	Research Fellow, Department of Cell Biology, UT Southwestern Medical Center
1985-1986	Research Fellow, Department of Dermatology, UT Southwestern Medical Center
1986-1991	Faculty ("joshu"), Department of Dermatology, Nagoya City University
1990-1992	Visiting Assistant Professor of Dermatology, UT Southwestern Medical Center
1992-1994	Assistant Professor of Dermatology, UT Southwestern Medical Center
1994-1996	Associate Professor of Dermatology, UT Southwestern Medical Center
1997-Present	Professor of Dermatology, UT Southwestern Medical Center
1997-Present	Director of Cutaneous Biology Laboratory, UT Southwestern Medical Center
1998-Present	Vice Chairman for Research, Dermatology, UT Southwestern Medical Center
1999-2001	Director for Immunodermatopathology Fellowship Training, Dermatology UT Southwestern Medical Center
1999-Present	Thomas L. Shields, M.D. Professorship, UT Southwestern Medical Center
1992-Present	Faculty of Immunology Program, Graduate School of Biomedical Sciences

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1999-Present Faculty of Molecular Microbiology Program, Graduate School of Biomedical Sciences
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2002-Present	Professor of Internal Medicine, Center for Biomedical Inventions UT Southwestern Medical Center
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Membership in Academic Societies:

American Society for Clinical Investigation
American Association for Cancer Research
American Association of Immunologists
American Federation of Clinical Research
American Society for Photobiology
Society for Investigative Dermatology
Molecular Medicine Society
Japanese Society for Investigative Dermatology
Japanese Dermatological Association
New York Academy of Sciences

Awards and Honors:

CE.R.I.E.S. Award (1996)
American Society for Clinical Investigation (1998)
William Montagna Lectureship (2004)

Editorial Responsibilities:

1997-2001	Associate Editor, <i>Journal of Immunology</i>
2001	Volume Editor, <i>Chemical Immunology</i> , Vol 79:γδ T cells
2000-present	International Advisory Board, <i>Journal of Dermatology</i>
2001-present	Section Editor, <i>Journal of Immunology</i>
2002-present	Associate Editor, <i>Journal of Investigative Dermatology</i>
2002-present	Regional Editor, <i>Journal of Dermatological Science</i>

Scientific Activities:

1997-2000	Medical and Scientific Committee, Dermatology Foundation
2002-2003	Scientific Advisory Board, National Alopecia Areata Foundation
2001-present	Scientific Program Committee, Society of Investigative Dermatology

Patents:

1. Unique Dendritic Cell-Associated C-Type Lectins, Dectin-1 and Dectin-2; Compositions and Uses Thereof:
A Takashima, Ariizumi K. US Patent Number 6046158, 4/4/00
2. Modulators of Polysaccharides and Uses Thereof: US Patent Number 6,653,285, 11/25/03
A Takashima, ME Mummert, M Mohamadzadeh
3. Hybrid Dendritic Cells to Induce Antigen-specific Modulation of the Immune System:
H Matsue, **A Takashima** US Patent Application Serial No. 09/536,176
4. Transcription Factor Inhibitors to Prevent and/or Treat Radiation-Induced Skin Changes:
K Abeyama, PR Bergstresser, **A Takashima** US Patent Application Serial No. 09/534,837

5. Inhibitors of Glycosaminoglycans
M Mummert, **A Takashima** US Patent Application Serial No. 09/532,709
6. Diagnosis and Treatment of Inflammation
T Kumamoto, N Mizumoto, **A Takashima** Provisional Patent Application filed March 1, 2001
7. *In Situ* Langerhans Cell Vaccine
A Takashima, T Kumamoto US Patent Application Serial No. 09/808,555
8. Ebselen as a Therapeutic for Preventing Diseases Associated with Dendritic Cell
A Takashima Provisional Patent Application filed March 28, 2003

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